

Notice of Allowability

Application No.

10/726,871

Applicant(s)

HAHN, SEUNG HO

Examiner

Art Unit

Jennifer M. Kennedy

2812

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to the RCE filed 4/8/2005.
2. ☒ The allowed claim(s) is/are 1-6 and 8-15.
3. ☒ The drawings filed on 03 December 2003 are accepted by the Examiner.
4. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☒ All b) ☐ Some* c) ☐ None of the:
 1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
6. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.

Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☐ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO-1449 or PTO/SB/08),
Paper No./Mail Date _____
4. ☐ Examiner's Comment Regarding Requirement for Deposit
of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☐ Interview Summary (PTO-413),
Paper No./Mail Date _____
7. ☐ Examiner's Amendment/Comment
8. ☐ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____


Jennifer M. Kennedy
Primary Examiner
Art Unit 2812

REASONS FOR ALLOWANCE

The following is an examiner's statement of reasons for allowance: the prior art, either singly or in combination, fails to anticipate or render obvious, the method including the limitations of performing a nitrogen ion-implantation to the substrate and gate electrode after patterning to form the gate insulating layer and the gate electrode, annealing the substrate so as to form a re-oxidation layer that has a different thickness on the sidewalls of the gate electrode than on the substrate, and forming source/drain regions or an LDD structure after the annealing of the substrate as claimed in independent claims 1 and 8.

The examiner notes that Tsai et al. discloses the method of forming the source/drain regions and LDD region prior to annealing to form the oxidation layer. The examiner is persuaded by Applicants arguments on pages 8-11 of the response filed April 8, 2005, regarding the combination of Tsai et al. and Chiao.

Further, while it is maintained that Chiao teaches an alternative method in which the source/drain and LDD are formed after the oxidation process (see Figures 7 and 8 and Column 7, lines 30-65) it would not have been obvious to combine the method of Chiao with Tsai et al. for the reasons Applicant has set forth in the response.

Finally, Chiao does disclose the method of performing a nitrogen ion-implantation, patterning to form the gate insulating layer and the gate electrode, annealing the substrate so as to form a re-oxidation layer that has a different thickness on the sidewalls of the gate electrode than on the substrate, and forming source/drain regions or an LDD structure after the annealing of the substrate as claimed ion-

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implantation after patterning to form the gate insulating layer and the gate electrode.

However, Chiao disclose the method of nitrogen ion-implantation prior to patterning to form the gate insulating layer and the gate electrode, rather than after as claimed.

Thus, because of the change in the order of steps Chiao does not implant the substrate, and the re-oxidation of the substrate is not affected by the nitrogen implantation.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jennifer M. Kennedy whose telephone number is (571) 272-1672. The examiner can normally be reached on Mon.-Fri. 9:30-6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael S. Lebentritt can be reached on (571) 272-1873. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Jennifer M. Kennedy
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